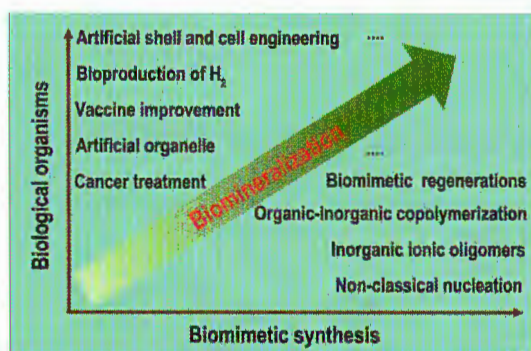


Chemistry Authors Up Close

Biomimneralization: Biomimetic Synthesis of Materials and Biomimetic Regulation of Organisms

Zaiqiang Ma, Benke Li, and Ruikang Tang*

Chin. J. Chem. **2021**, 39, 2071–2082. DOI: 10.1002/cjoc.202100119



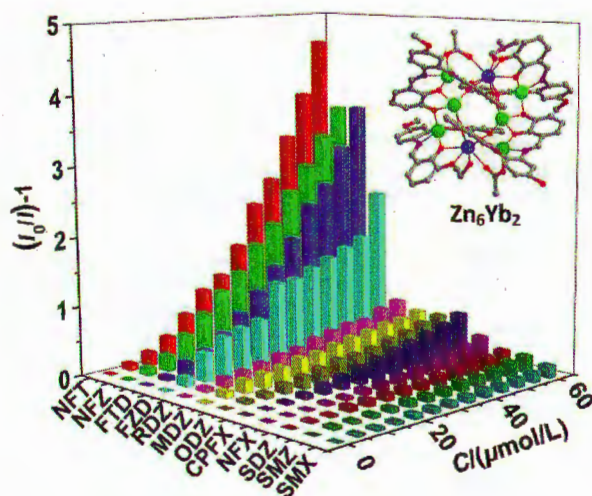
A study of biomineralization reveals a new understanding of crystallization leading to a discovery of inorganic ionic oligomers, which can be used as the conformable precursors for the moldable constructions of inorganic and organic-inorganic materials. By using biomimetic mineralization, we can not only achieve regeneration/repair of hard tissues, but also improve biological organisms, following an evolution of biomineralization study from biomimetic synthesis of materials to biomimetic regulation of organisms by using materials.

Concise Reports

Construction of an Octanuclear Zn(II)-Yb(III) Schiff Base Complex for the NIR Luminescent Sensing of Nitrofurant Antibiotics

Mengyu Niu, Xiaoping Yang,* Yanan Ma, Chengri Wang, Wenxin Hao, Dongliang Shi, and Desmond Schipper

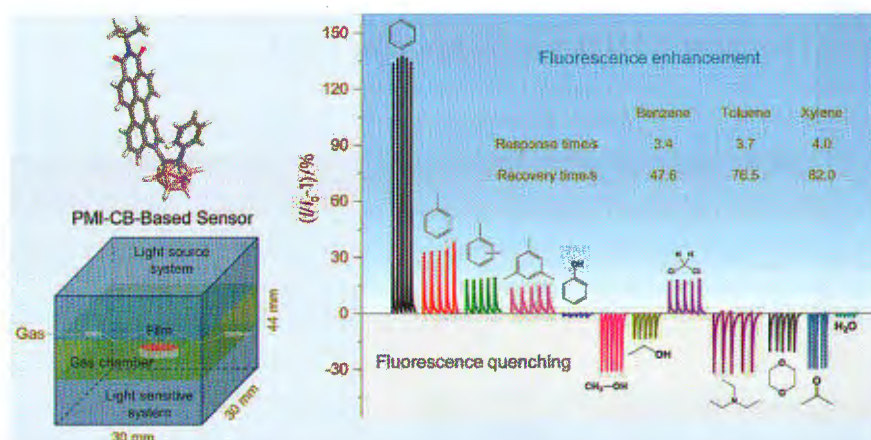
Chin. J. Chem. **2021**, 39, 2083–2087. DOI: 10.1002/cjoc.202100049



One octanuclear Zn(II)-Yb(III) complex $[Zn_6Yb_2L_4(OAc)_2](DMF)EtOH$ with NIR luminescent response towards antibiotics was constructed.

Nonplanar Perylene Monoimide-Based Fluorescent Film for Enhanced BTX Sensing

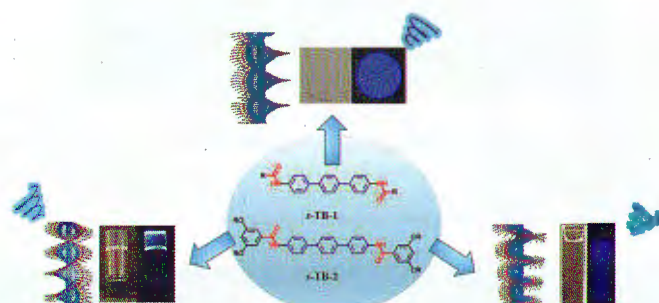
Meiling Zhang, Nannan Ding, Fayan Lai, Congdi Shang, Rong Miao, Zhongshan Liu,* and Yu Fang*
Chin. J. Chem. **2021**, *39*, 2088–2094. DOI: 10.1002/cjoc.202100108



A new perylene monoimide derivative (PMI-CB) was synthesized through the introduction of a three-dimensional *o*-carborane unit. The PMI-CB film packed into a miniaturized fluorescent sensor exhibited high sensitivity and selectivity in BTX (i.e., benzene, toluene, xylene) sensing.

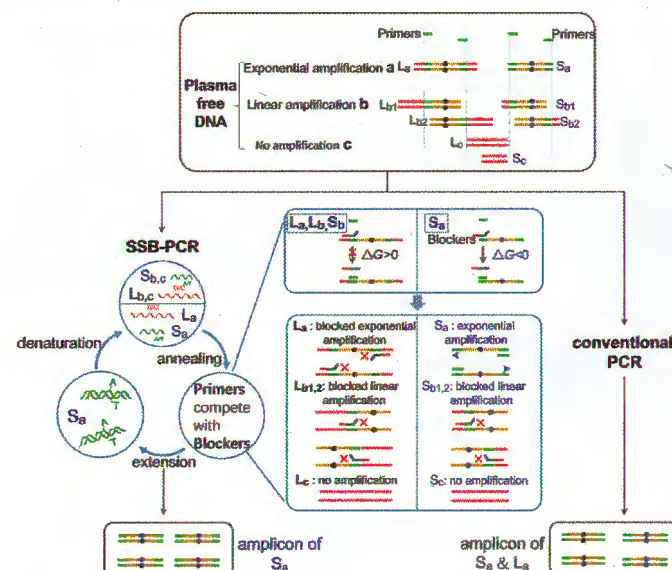
Circularly Polarized Luminescence from Chiral *p*-Terphenylene-Based Supramolecular Aggregates

Titi Xie, Wei Yuan, Xiaopei Li, Mengwei Li, and Yulan Chen*
Chin. J. Chem. **2021**, *39*, 2095–2100. DOI: 10.1002/cjoc.202100139



Short-DNA Specific Blocker PCR for Efficient and Simple Enrichment of Cell Free Fetal DNAs with Short Lengths

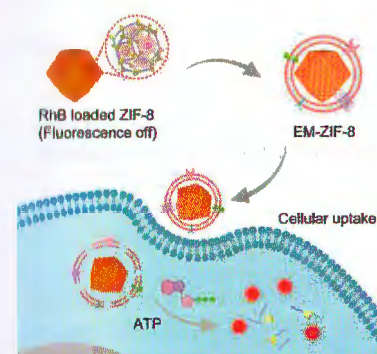
Yangwei Liao, Xiaofeng Tang, Zhihao Ming, Lida Ren, Wei Zhang, and Xianjin Xiao*
Chin. J. Chem. **2021**, *39*, 2101–2106. DOI: 10.1002/cjoc.202100187



We developed the SSB-PCR (Short-DNA Specific Blocker PCR) technology to enrich the cell free fetal DNAs with short lengths in an efficient and simple way. We believe that this method has great potential to achieve accurate, fast, and cost-effective non-invasive prenatal testing.

Exosome-Coated Zeolitic Imidazolate Framework Nanoparticles for Intracellular Detection of ATP

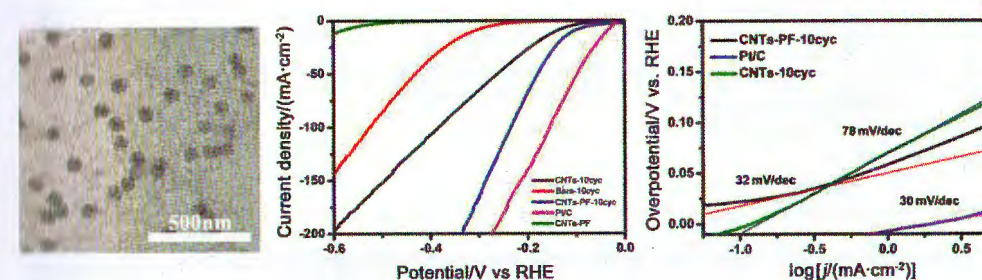
Wenxing Lv, Ziwei Han, Yike Li, Yanjuan Huang, Jiashu Sun, Xiaoquan Lu,* and Chao Liu*
Chin. J. Chem. **2021**, *39*, 2107–2112. DOI: 10.1002/cjoc.202100162



Exosome membrane-coated zeolitic imidazolate framework-8 (EM-ZIF-8) nanoparticles are fabricated through a microfluidic sonication approach. The devised biomimetic EM-ZIF-8 nanoparticles are a highly efficient platform for intracellular drug delivery and ATP sensing.

Uniform Formation of Amorphous Cobalt Phosphate on Carbon Nanotubes for Hydrogen Evolution Reaction

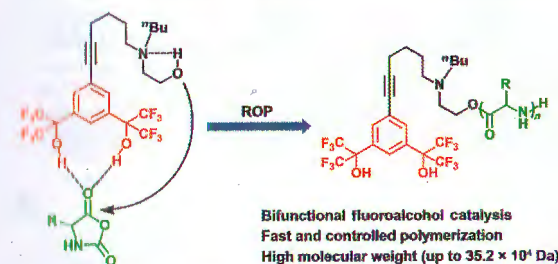
Mengzhan Ge, Xiaodong Zhang, Shangzhou Xia, Wenjie Luo, Yuwei Jin, Qianqian Chen, Huagui Nie,* and Zhi Yang*
Chin. J. Chem. **2021**, *39*, 2113–2118. DOI: 10.1002/cjoc.202000695



A highly efficient hydrogen-evolution electrode was successfully fabricated by PF-assisted CoPi amorphously electrodeposited onto PF-CNTs substrates through π - π stacking interactions. The obtained CoPi/PF-CNTs catalysts demonstrated high catalytic activity and stability for HER in acidic electrolyte.

Bifunctional Fluoroalcohol Catalysts Enabled Sustainable Synthesis of Poly(amino acid)s

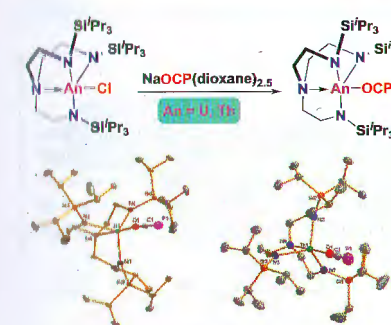
Wenjing He and Youhua Tao*
Chin. J. Chem. **2021**, *39*, 2119–2124. DOI: 10.1002/cjoc.202100205



A novel bifunctional single-molecule hydrogen-bonding organocatalyst based on fluorinated tertiary alcohols was designed to mediate the metal-free polymerization of α -amino acid *N*-carboxyanhydride monomer.

Facile Access to Uranium and Thorium Phosphaethynolate Complexes Supported by Tren: Experimental and Theoretical Study

Jipan Yu, Kang Liu, Qunyan Wu,* Bin Li, Xianghe Kong, Kongqiu Hu, Lei Mei, Liyong Yuan, Zhifang Chai, and Weiqun Shi*
Chin. J. Chem. **2021**, *39*, 2125–2131. DOI: 10.1002/cjoc.202100149

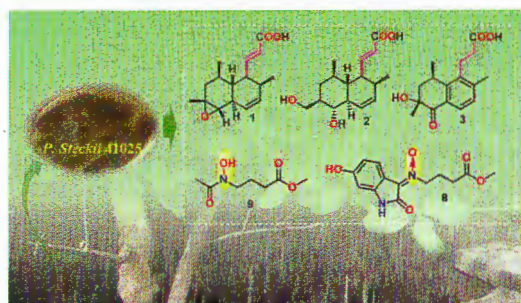


Tren-supported actinide (U, Th) complexes containing O-bound phosphaethynolate have been synthesized via salt metathesis approach. The structures of [U(Tren^{TIPS})(OCP)] and [Th(Tren^{TIPS})(OCP)] were identified by NMR and X-ray crystal diffraction. The electronic structures and bonding characteristic of the two complexes have indicated that U–O σ bonds have a more covalent character compared to Th–O bonds based on the theoretical calculations.

Diversified Polyketides and Nitrogenous Compounds from the Mangrove Endophytic Fungus *Penicillium steckii* SCSIO 41025

Chun-Mei Chen, Wei-Hao Chen, Hua-Ming Tao, Bin Yang, Xue-Feng Zhou, Xiao-Wei Luo,* and Yong-Hong Liu*

Chin. J. Chem. 2021, 39, 2132–2140. DOI: 10.1002/cjoc.202100226

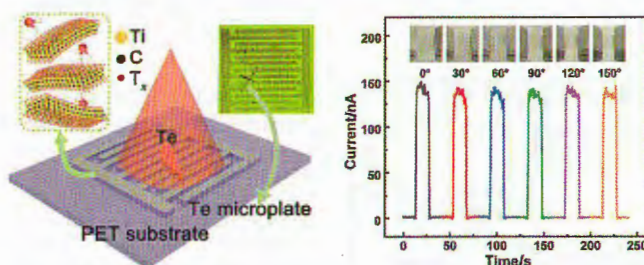


Three highly oxygenated decalin derivatives harboring uncommon propanoic acid units and two rare natural amine-*N*-oxides were obtained from the mangrove endophytic fungus *Penicillium steckii* SCSIO 41025.

Flexible Transparent Near-Infrared Photodetector Based on 2D Ti₃C₂ MXene-Te Van Der Waals Heterostructures

Chuqiao Hu, La Li, and Guozhen Shen*

Chin. J. Chem. 2021, 39, 2141–2146. DOI: 10.1002/cjoc.202100229

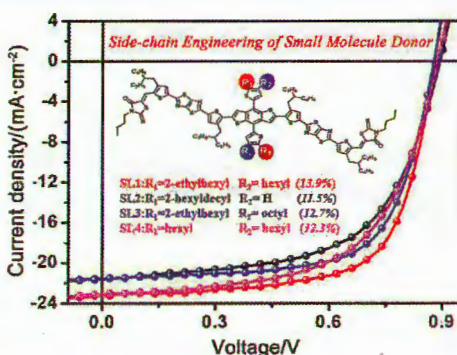


A Ti₃C₂ MXene-Te microplate van der Waals heterostructure based transparent near-infrared photodetector (PD) is exploited.

Modulating Crystallinity and Miscibility via Side-chain Variation Enable High Performance All-Small-Molecule Organic Solar Cells

Yang Wang, Qunping Fan, Yulong Wang, Jin Fang, Qi Liu, Lei Zhu, Jinjing Qiu, Xia Guo,* Feng Liu, Wenyan Su, and Maojie Zhang*

Chin. J. Chem. 2021, 39, 2147–2153. DOI: 10.1002/cjoc.202100216

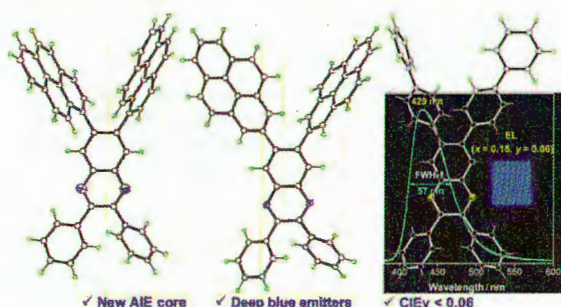


Side-chain engineering as one of the most important molecular design strategies has been widely used to improve photovoltaic efficiency of active layer materials. In this work, we regulated the crystallinity of the small molecule donors and their miscibility with the acceptor via the suitable selection of the alkyl substitution on the side chains of the BDT-T, and revealed what is the most suitable aggregation degree to achieve the satisfying blend film morphology and device performance.

New Quinoxaline-Based Blue Emitters: Molecular Structures, Aggregation-Induced Enhanced Emission Characteristics and OLED Application

Xiaoyu Mao, Fuli Xie, Xiaohui Wang, Qingsong Wang, Zhipeng Qiu, Mark R. J. Elsegood, Jie Bai, Xing Feng,* Carl Redshaw, Yanping Huo,* Jian-Yong Hu,* and Qing Chen*

Chin. J. Chem. 2021, 39, 2154–2162. DOI: 10.1002/cjoc.202100157



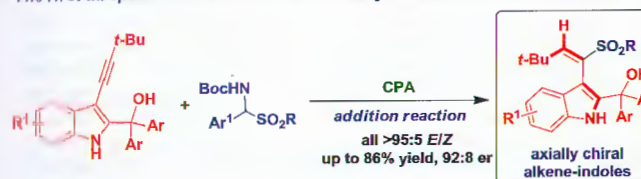
New deep blue light emitters, containing quinoxaline and pyrene (biphenyl) moieties are presented, which display both intramolecular charge transfer and aggregation-induced emission characteristics. More importantly, the selected blue emitter gives a deep blue electroluminescence (EL) peak at 428 nm with a narrow FWHM of 57 nm in doped OLED devices, and the Commission Internationale de L'Eclairage (CIE) chromaticity coordinate of (0.15, 0.06).

Atroposelective Construction of Axially Chiral Alkene-Indole Scaffolds via Catalytic Enantioselective Addition Reaction of 3-Alkynyl-2-indolylmethanols

Jing-Yi Wang, Meng Sun, Xian-Yang Yu, Yu-Chen Zhang, Wei Tan,* and Feng Shi*

Chin. J. Chem. 2021, 39, 2163–2171. DOI: 10.1002/cjoc.202100214

The first atroposelective construction of axially chiral alkene-indole frameworks

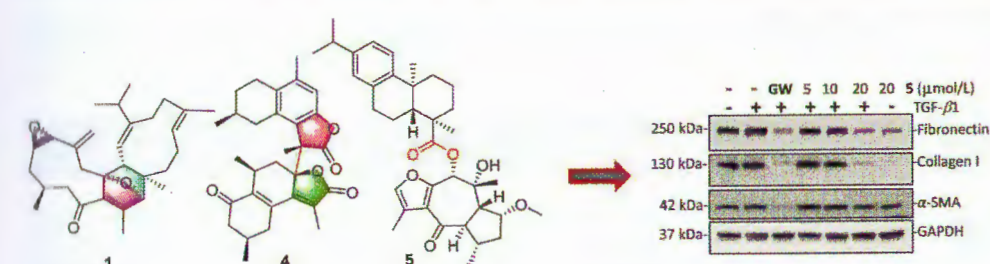


An atroposelective construction of axially chiral alkene-indole scaffolds has been established via the strategy of catalytic enantioselective addition reaction of 3-alkynyl-2-indolylmethanols with α -amido sulfones in the presence of chiral phosphoric acid. By this strategy, a new class of axially chiral acyclic alkene-indoles was synthesized in overall high yields (up to 86%), excellent (*E/Z*)-selectivity (all > 95:5) and good enantioselectivities (up to 92:8 er). This reaction represents the first catalytic enantioselective construction of axially chiral alkene-indole frameworks.

Commiphoroids G1–G3, H and I, Five Terpenoid Dimers as Extracellular Matrix Inhibitors from *Resina Commiphora*

Lu Dong, Jian-Bing Jiang, Yong-Ming Yan, Shu-Mei Wang, and Yong-Xian Cheng*

Chin. J. Chem. 2021, 39, 2172–2180. DOI: 10.1002/cjoc.202100240

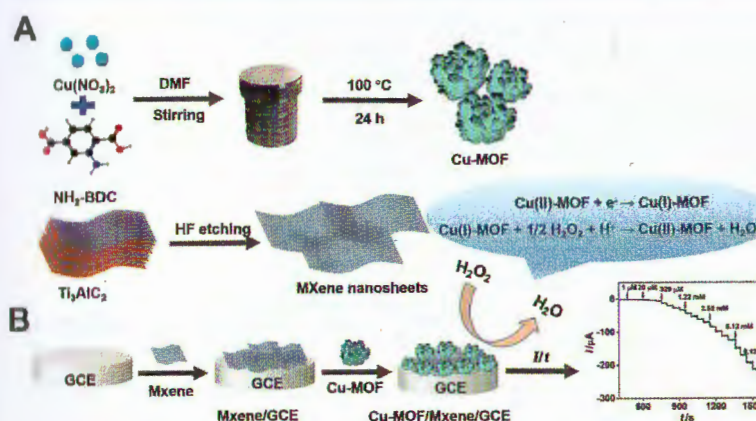


One of five natural terpenoids isolated from *Resina Commiphora* inhibits renal fibrosis by reducing fibronectin, collagen I and α -SMA expressions.

Enzyme-free Electrochemical Detection of Hydrogen Peroxide Based on the Three-Dimensional Flower-like Cu-based Metal Organic Frameworks and MXene Nanosheets

Dan Cheng, Peipei Li, Xiaohua Zhu, Meiling Liu,* Youyu Zhang, and Yang Liu*

Chin. J. Chem. 2021, 39, 2181–2187. DOI: 10.1002/cjoc.202100158

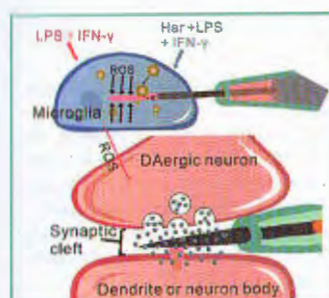


The Scheme illustrates the preparation of 3D flower-like Cu-MOF and ultra-thin MXene nanosheets (A), and the fabrication procedures of the Cu-MOF/MXene modified electrode for the electrochemical detection of H₂O₂ (B).

Harpagide Inhibits Microglial Activation and Protects Dopaminergic Neurons as Revealed by Nanoelectrode Amperometry

Fu-Li Zhang, Yun Tang, Hong Jiang, Xiao-Ke Yang, and Wei-Hua Huang*

Chin. J. Chem. 2021, 39, 2188–2194. DOI: 10.1002/cjoc.202100178

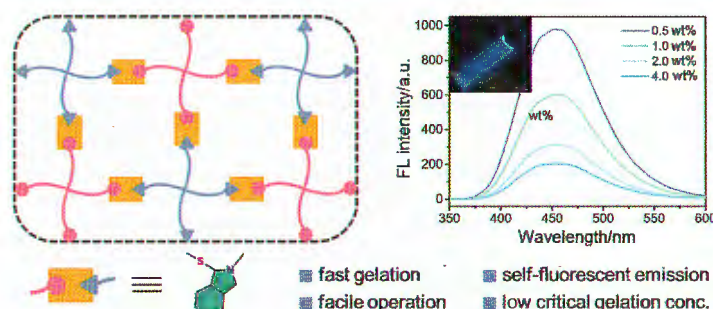


In this work, nanoelectrode amperometry was used to investigate how natural product harpagide inhibits microglia activation and protects DAergic neurons. Intracellular monitoring with single platinized SiC@C NWs showed that harpagide can efficiently decrease intracellular ROS concentration in microglia suffering activation by inflammatory factors LPS and IFN- γ . Intra-synapse monitoring using CFNEs indicated that harpagide can effectively protect DAergic neuron exocytosis function from microglial inflammation. The results indicate that harpagide inhibits microglia from activation, reduces inflammation-mediated neural injury and maintains dopamine exocytosis function. These conclusions establish that harpagide possesses promising avenues for preventive or therapeutic interventions against PD and other NDDs.

A Versatile Crosslinking Strategy on Facile Fabrication of Fluorescent Hydrogels via *o*-Phthalaldehyde Ternary Condensation

Qingchen Cao, Hufei Wang, Xing Wang,* and Decheng Wu*

Chin. J. Chem. 2021, 39, 2195–2200. DOI: 10.1002/cjoc.202100297

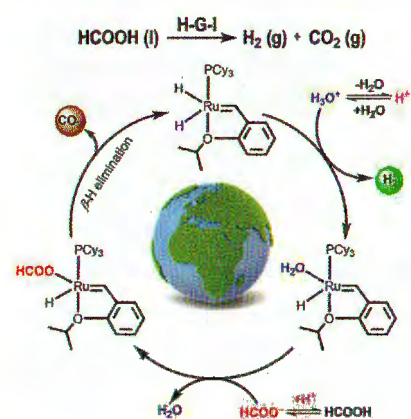


Herein, we applied the ternary condensation reaction of *o*-phthalaldehyde (OPA) with thiol and amino moieties to construct hydrogel networks with fast gelation rate, excellent mechanical strength, and favorable stability. The OPA ternary condensation reaction was a simple and universal strategy towards fabrication of natural or synthetic polymer gels from polysaccharides, proteins, and synthetic polymers, which is expected to have potential biomedical applications.

Formic Acid Dehydrogenation for Hydrogen Production Promoted by Grubbs and Hoveyda-Grubbs Catalysts

Qian Wang, Yihao Xia, Fanrui Cheng, Zhijian Chen, Yifan Wang, Xiaofei Zhu, Lei Qin,* and Zhiping Zheng*

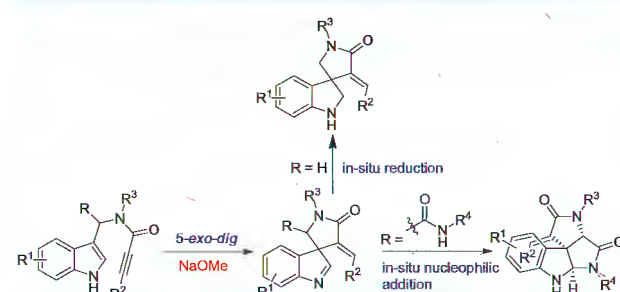
Chin. J. Chem. 2021, 39, 2201–2206. DOI: 10.1002/cjoc.202000749



Access to Polycyclic Indol(en)ines via Base-Catalyzed Intramolecular Dearomatizing 3-Alkenylation of Alkynyl Indoles

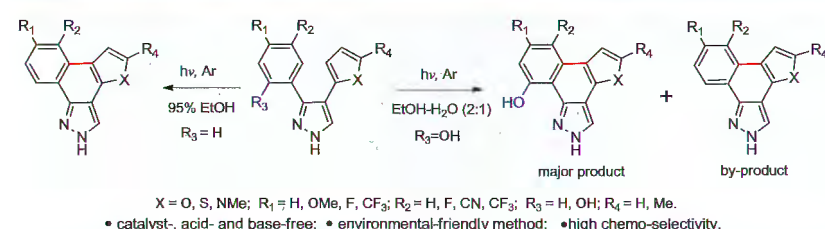
Lin Lu, Zuoliang Zheng, Yongjie Yang, Bo Liu, and Biao Lin Yin*

Chin. J. Chem. 2021, 39, 2207–2212. DOI: 10.1002/cjoc.202100164

Synthesis of 2*H*-Benzo[*g*]furo/thieno/pyrrolo[2,3-*e*]indazoles via Intramolecular Dehydrogenation Photocyclization

Wei Zhang, Ping Wang, Xi Zhang, Rui Wang, Tao Wang, Zhicun Liu,* and Zunting Zhang*

Chin. J. Chem. 2021, 39, 2213–2219. DOI: 10.1002/cjoc.202100103

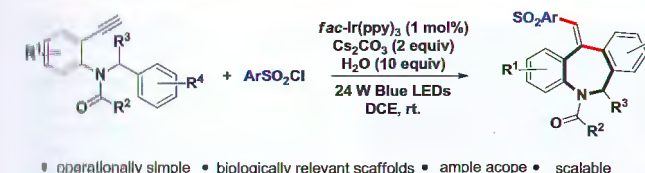


A catalyst-, acid- and base-free, environmental-friendly method for synthesis of 2*H*-benzo[*g*]furo/thieno/pyrrolo[2,3-*e*]indazoles derivatives via irradiation of 3-phenyl-4-(2-heteroaryl)pyrazoles in EtOH/H₂O with UV light at room temperature under argon atmosphere was described. Irradiation of 3-(2-hydroxyphenyl)-4-(2-heteroaryl)pyrazoles showed a high chemoselectivity to obtain dehydrogenation product 2*H*-benzo[*g*]furo/thieno/pyrrolo[2,3-*e*]indazoles-10-ol.

Visible Light-Mediated Construction of Sulfonated Dibenzazepines

Chuan-Hua Qu, Gui-Ting Song, Jian-Hua Ou, Dian-Yong Tang, Zhi-Gang Xu,* and Zhong-Zhu Chen*

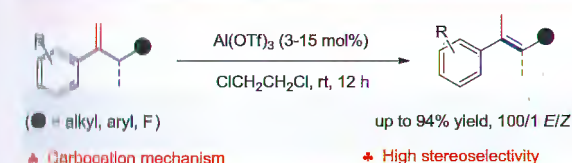
Chin. J. Chem. 2021, 39, 2220–2226. DOI: 10.1002/cjoc.202100194



Highly Stereoselective Positional Isomerization of Styrenes via Acid-Catalyzed Carbocation Mechanism

Xiao-Si Hu, Jun-Xiong He, Ying Zhang, Jian Zhou, and Jin-Sheng Yu*

Chin. J. Chem. 2021, 39, 2227–2233. DOI: 10.1002/cjoc.202100218

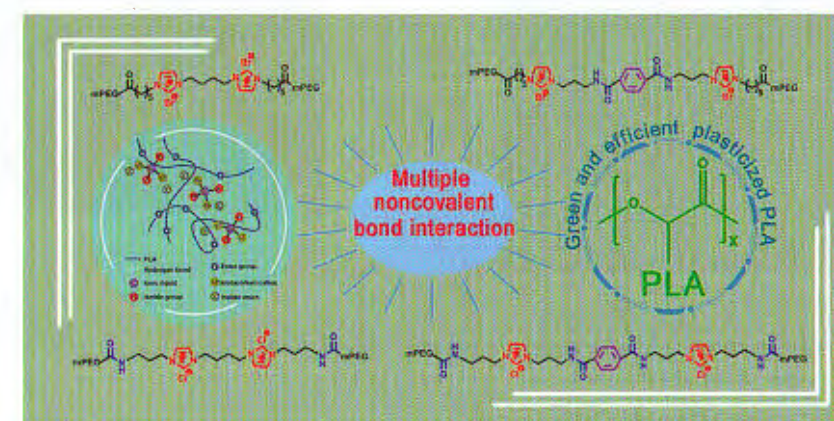


Comprehensive Reports

Novel Designed PEG-Dicationic Imidazolium-Based Ionic Liquids as Effective Plasticizers for Sustainable Polylactide

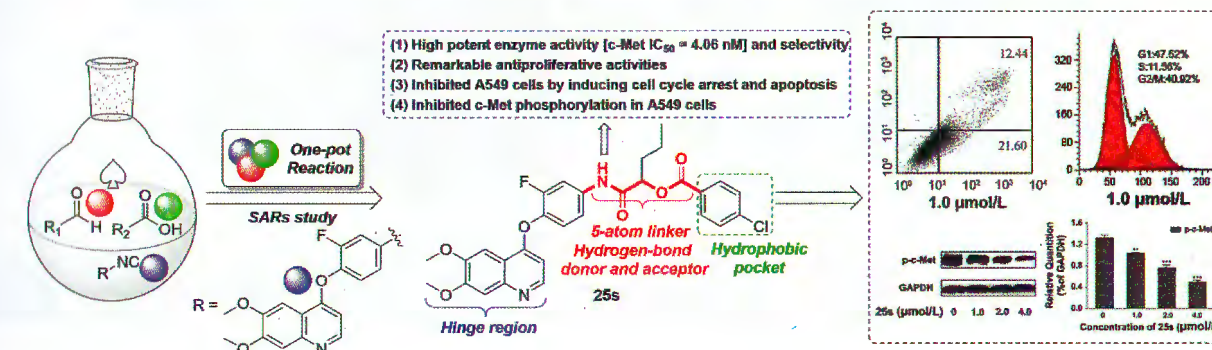
Huijie Zuo, Xiangjian Chen, Yingli Ding, Liang Cui, Baomin Fan, Li Pan, and Kunyu Zhang*

Chin. J. Chem. 2021, 39, 2234–2240. DOI: 10.1002/cjoc.202100217

Design, Synthesis and Biological Evaluation of Novel α -Acetoxycarboxamide-Based Derivatives as c-Met Inhibitors

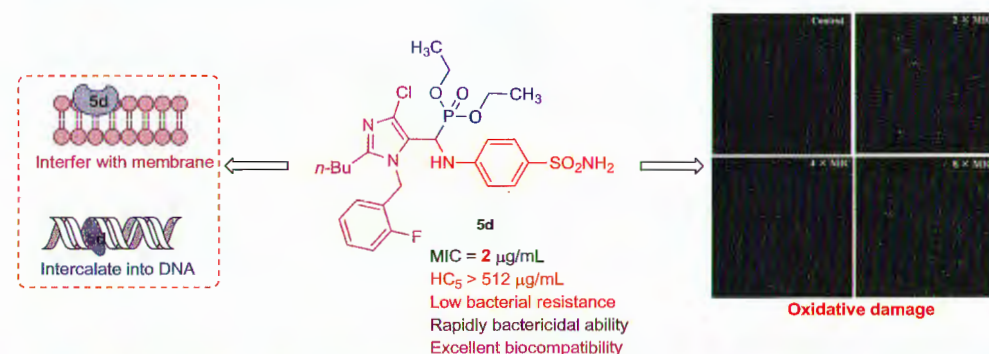
Yu-Juan Feng, Yu-Lin Ren,* Li-Ming Zhao,* Guo-Qiang Xue, Wen-Hao Yu, Jia-Qi Yang, and Jun-Wei Liu

Chin. J. Chem. 2021, 39, 2241–2250. DOI: 10.1002/cjoc.202100106



Design and Synthesis of Sulfanilamide Aminophosphonates as Novel Antibacterial Agents towards *Escherichia coli*

Juan Wang, Mohammad Fawad Ansari, Jian-Mei Lin,* and Cheng-He Zhou*

Chin. J. Chem. 2021, 39, 2251–2263. DOI: 10.1002/cjoc.202100165

A class of unique sulfanilamide aminophosphonates as new regulators against microbes was synthesized by one-pot three-component reaction and their biological evaluations indicated that sulfanilamide aminophosphonates would shed light on developing novel potential antibacterial agents to combat with microbial infection.

Recent Advances

Prebiotic Chemistry in Aqueous Environment: A Review of Peptide Synthesis and Its Relationship with Genetic Code

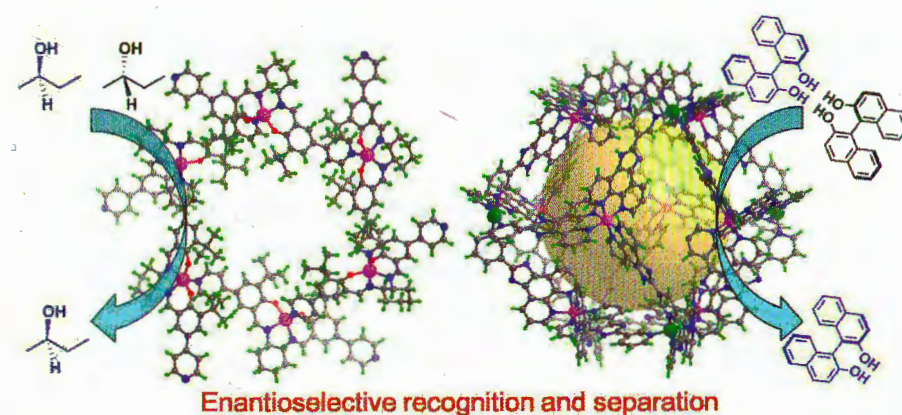
Jianxi Ying,* Ruiwen Ding, Yan Liu, and Yufen Zhao*

Chin. J. Chem. 2021, 39, 2264–2272. DOI: 10.1002/cjoc.202100120

Prebiotic peptide synthesis and its relationship with genetic code origin on the plausible early Earth environments were reviewed. Their interactions could promote the chemical evolution of life molecules in the prebiotic chemical process.

Chiral Coordination Metallacycles/Metallacages for Enantioselective Recognition and Separation

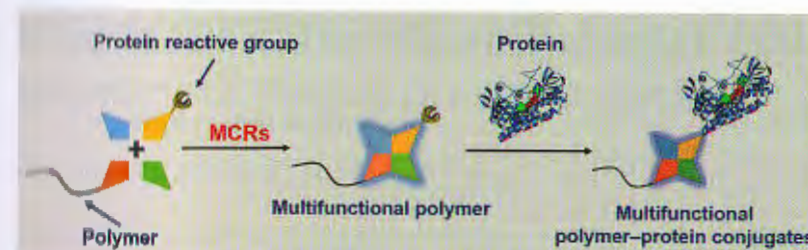
Liyan Zhang, Huiping Liu, Guozan Yuan,* and Ying-Feng Han*

Chin. J. Chem. 2021, 39, 2273–2286. DOI: 10.1002/cjoc.202100180

Recent progress on chiral coordination metallacycles/metallacages with inherent cavities for enantioselective recognition and separation is summarized, including their design principles and synthesis, the introduction of chirality and functionality, structural adaptability, and enantioselective process.

Multifunctional Polymer-Protein Conjugates Generated by Multicomponent Reactions

Tengfei Mao, Chongyu Zhu,* and Lei Tao*

Chin. J. Chem. 2021, 39, 2287–2295. DOI: 10.1002/cjoc.202100153

Recent development of multifunctional polymer-protein conjugates facily prepared via different multicomponent reactions has been summarized.

Critical Review

Multifunctional Fire-Resistant Paper Based on Ultralong Hydroxyapatite Nanowires

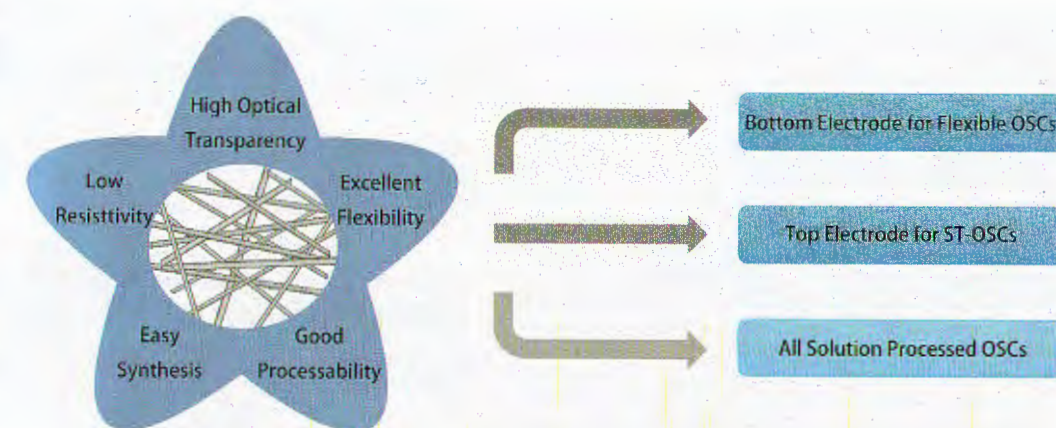
Ying-Jie Zhu*

Chin. J. Chem. 2021, 39, 2296–2314. DOI: 10.1002/cjoc.202100170

This review article provides a comprehensive summary, discussion and perspective on recent research advances for a new kind of multifunctional fire-resistant paper based on ultralong hydroxyapatite nanowires, including the synthesis, properties, and applications.

Solution-Processed Silver Nanowire as Flexible Transparent Electrodes in Organic Solar Cells

Yi Yang, Bowei Xu,* and Jianhui Hou*

Chin. J. Chem. 2021, 39, 2315–2329. DOI: 10.1002/cjoc.202000696

AgNW, as an emerging transparent conducting electrode, owns the advantages of high conductivity, high transparency, excellent mechanical flexibility and good solution processability. Thus, AgNW-based TCEs have become a promising candidate in serving as both bottom and top electrode in flexible and semi-transparent OSCs.